DVD Portable

PD7030/12/51/55/98/77/93/94

Service
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Service Manual

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Version 1.5

PHILIPS

1.0 TECHNICAL SPECIFICATION

VIDEO/ AUDIO Characteristic Testing discs

Test discs：DOLBY: Dolby Test disc
ABEX: TDV-540A

Video (PAL / NTSC)

White bar : 714mV +10%/-20%
Sync. Amplitude: 286mV ±40mV
Burst/chroma ratio: ± 15%
S/N luminance: >42 dB

POWER CONSUMPTION

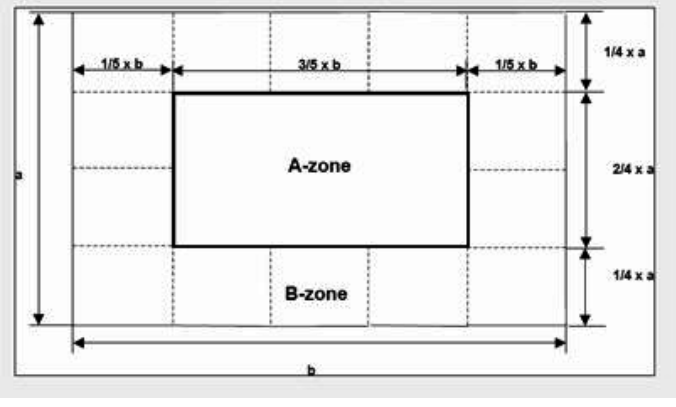
Power-Supply(AC-DC Adaptor):
Supply voltage: AC 100~240V ±10%
Supply Power consumption(AC adaptor 100/240V): 9V 0.8A +10%
DC Power supply(Operate voltage range): 6.3V-15.49V±10%
Standby Power (AC adaptor, no load),264VAC: <0.75W

GENERAL DESCRIPTION

7" TFT portable DVD player
Key Components: N/A
Optical Pickup: Sanyo 870PH
Loader:ASA PM2371-D/FORYOU DM520
Solution: MTK MT1389Q-DE
Disc Size: 12/8cm
Regional code: region 2 ,/12 version
Playable disc type: DVDRW/DVDR/CD/CD-R/CD-RW
Video format: DVD / SVCD / JPEG / MPEG4 / DIVX3, 4,5,6(Home theater)
Video output signal: PAL /NTSC
Audio format: CD / MP3(32 - 320 kbps)
Video DAC: 10 bit / 54 MHz
Audio D/A converter: 96KHz / 24-bit
User Interface: Philips GUI same as PET745
OSD language: English/French /Germany/Spanish/ Italian for /00, /05 version.
Screen Saver function: Yes
Button functions: Refer to MUS
SD/MMC slot:N/A
USB:YES

DVD PORTABLE PANEL ACCEPTANCE

DVD Portable panel acceptance
/37/17 region: 0 bright dot, 2 color dot, 3 dead dot
Other region: 1 bright, 2 color dot, 3 dead dot
Distance between dot >= 2cm
No bright dot is permitted for A-zone



1.1 PCBs Location

VERSION VARIATIONS

Type/Versions: / Service policy / Board in used:	PD7030						
	12	**51**	55	98	77	94	
MAIN BOARD	**C**	**C**	**C**	**C**	**C**	**C**	
KEY BOARD	**M**	**M**	**M**	**M**	**M**	**M**	
TFT BOARD	**M**	**M**	**M**	**M**	**M**	**M**	

***TIPS: C -- Component Lever Repair.**
M -- Module Lever Repair
X -- OCX

1.2 SW upgrade Procedure

Procedure for SW upgrade

1. unzip the .bin file from RAR package
2. copy the file in a CD-ROM or USB
3. read the CD-ROM or USB, followed the display tips, press "OK" key to start the upgrade

PS:
Write the file to a CD-ROM like the way to create a data disc:
1, make sure your PC has disc recorder
2, draw the file to DVD/CD RAM
3, your PC might show the tip to insert a disc to the DVD/CD RAM, then pls insert a CDROM
4, click the "write" to start the copy process

Warning: Do not unplug the AC adapter during firmware upgrade to prevent flash corrupt of the set!!

Procedure to check SW version of your DVD Portable

1. OPEN
2. Press SETUP MENU
3. Select Preferences
4. Select Version Info
5. Press “OK” key

2.0 SAFTETY INSTRUCTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

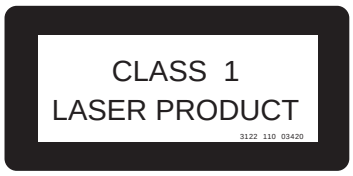
(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".



(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

Caution: These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

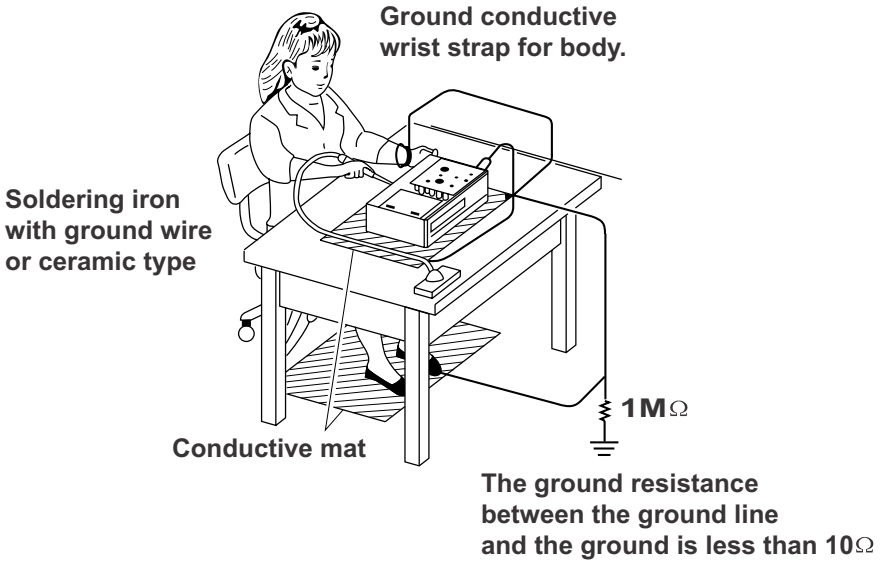
2.1 ESD PROTECTION

- レンズには絶対に触れないでください。
- DO NOT TOUCH THE LENS.
- LINSE NICHT BRÜHREN.
- NE PAS TOUCHER LA LENTILLE.

When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electrocity.
Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire,etc. to protect the laser diode form damage by static electricity.
And also, the LSI and IC are same as above.



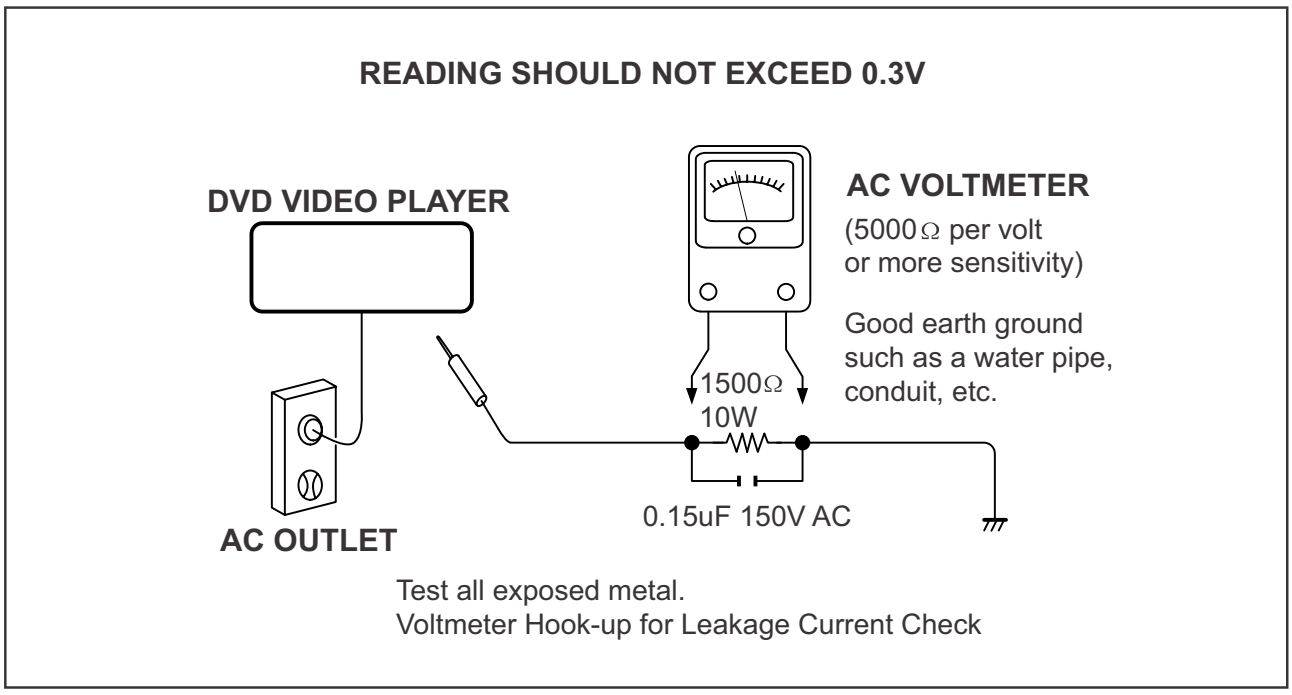
SAFTY NOTICE

SAFTY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000Ω per volt or more sensitivity. Connect a 1500Ω 10W resistor,paralleled by a 0.15uF 150V AC capacitor between a knomn good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

Measure the AC voltage across the 1500Ω resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3V.A reading exceeding 0.3V indicates that a dangerous potential exists, the fault must be located and corrected. Repeat the above test with the DVD VIDEO PLAYER power plug reversed.
NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

2.2 SAFETY INSTRUCTIONS

Battery Handling Guideline

Since the battery is packed in soft package, to ensure its better performance, it's very important to carefully handle the battery

2.2.1 Soft Aluminium foil

The soft aluminum packing foil is very easily damaged by sharp edge parts such as Ni-tabs, pins and needles.

- Don't strike battery with any sharp edge parts
- Trim your nail or wear glove before taking battery
- Clean worktable to make sure no any sharp particle

2.2.2 Sealed edge

Sealing edge is very flimsy

- Don't bend or fold sealing edge

2.2.3 Folding edge

The folding edge is form in battery process and passed all hermetic test.

- Don't open or deform folding edge

2.2.4 Tabs

The battery tabs are not so stubborn especially for aluminum tab.

- Don't bend tab

2.2.5 Mechanical shock

- Don't Fall, hit, bend battery body

2.2.6 Short

Short terminals of battery is strictly prohibited, it may damage battery.

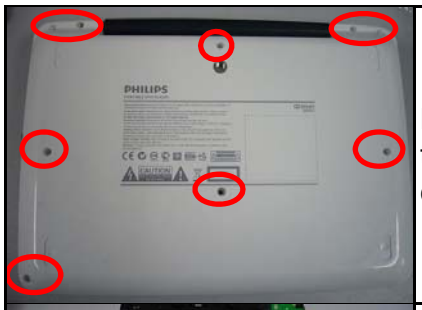
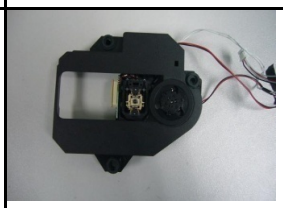
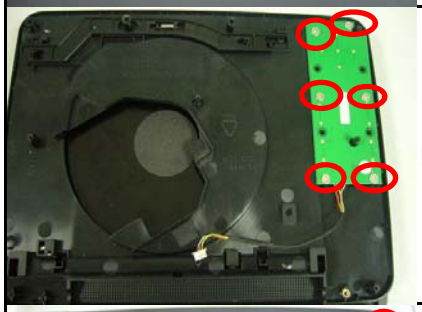
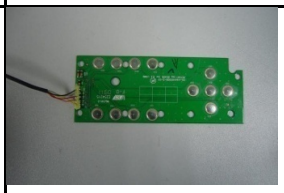
Caution: Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

3.0 Instruction for Use

You can download this information from the following websites:

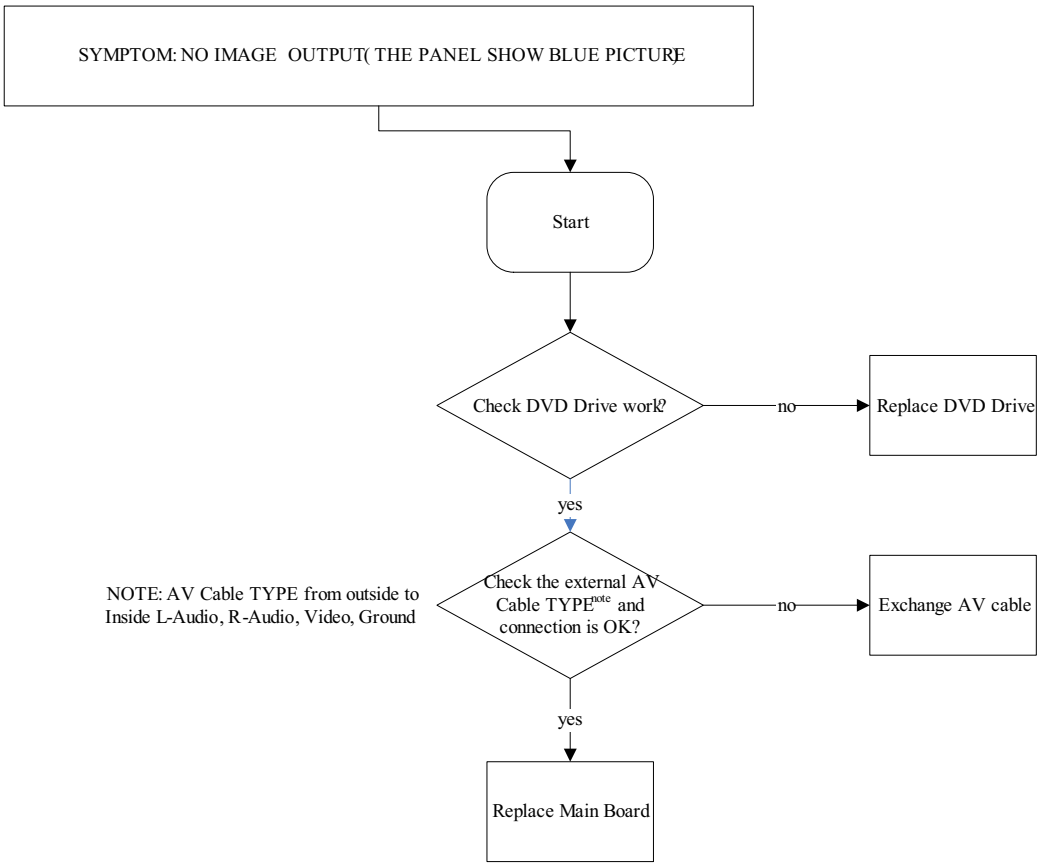
http://www.philips.com/support
http://www.p4c.philips.com

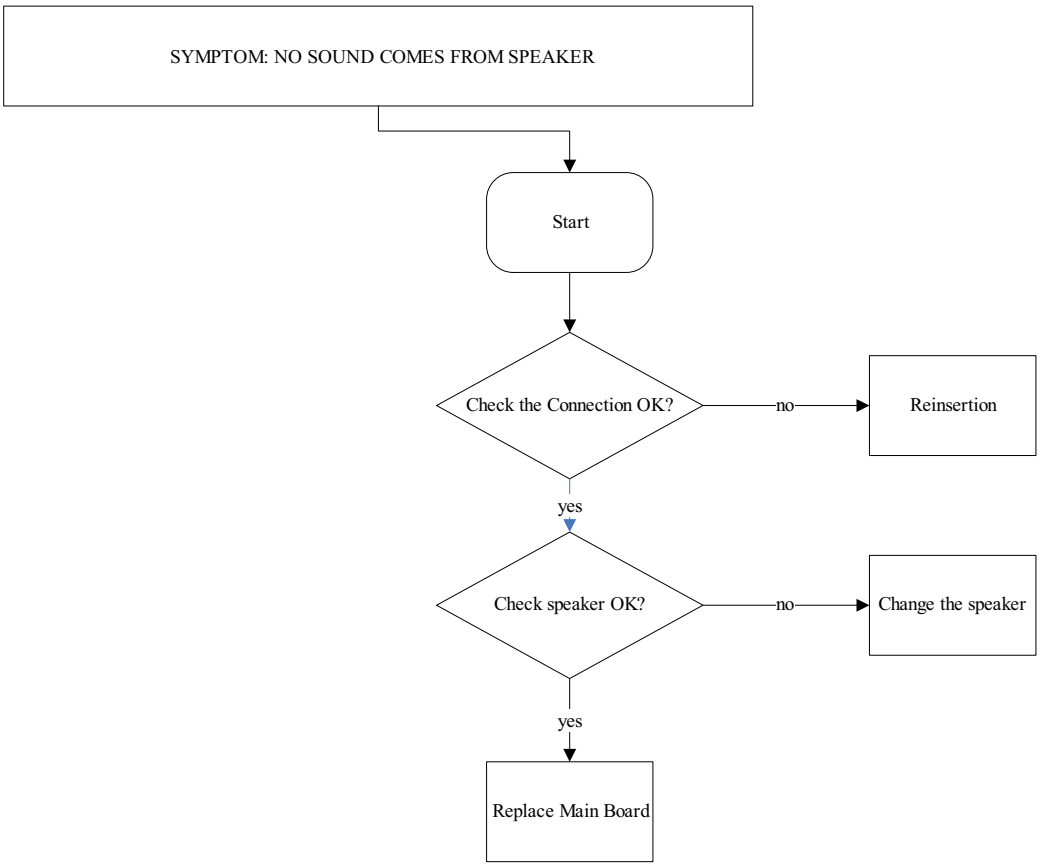
4.0 MECHANICAL AND DISMANTLING INSTRUCTIONS

	Remove nine screws on back cabinet to separate top cabinet and back cabinet.	screws 9pcs
	Generally open the front cabinet.	
	Remove 3 screws and disassemble the connecter on the DVD LOADER.	
	Remove four screws and disassemble the connecter on the Main board and Battery.	screws 4pcs.
	Remove six screws on the key board.	
	Remove the speaker grill and 4pcs screws. .	

5.0 TROUBLESHOOTING

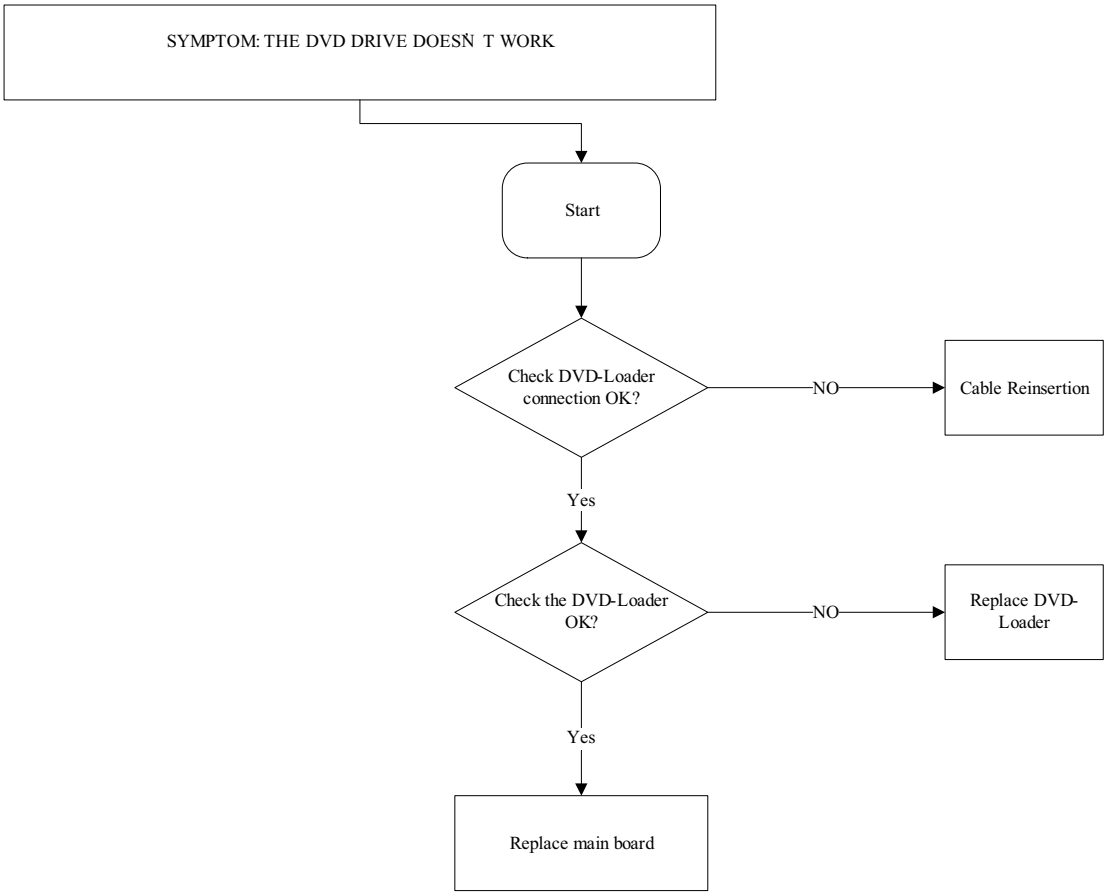
SYMPTOM: NO IMAGE / NO SOUND


SYMPTOM: NO IMAGE OUTPUT(THE PANEL SHOW BLUE PICTURE
Start
Check DVD Drive work?
no
Replace DVD Drive
yes
NOTE: AV Cable TYPE from outside to Inside L-Audio, R-Audio, Video, Ground
Check the external AV Cable TYPE note and connection is OK?
no
Exchange AV cable
yes
Replace Main Board



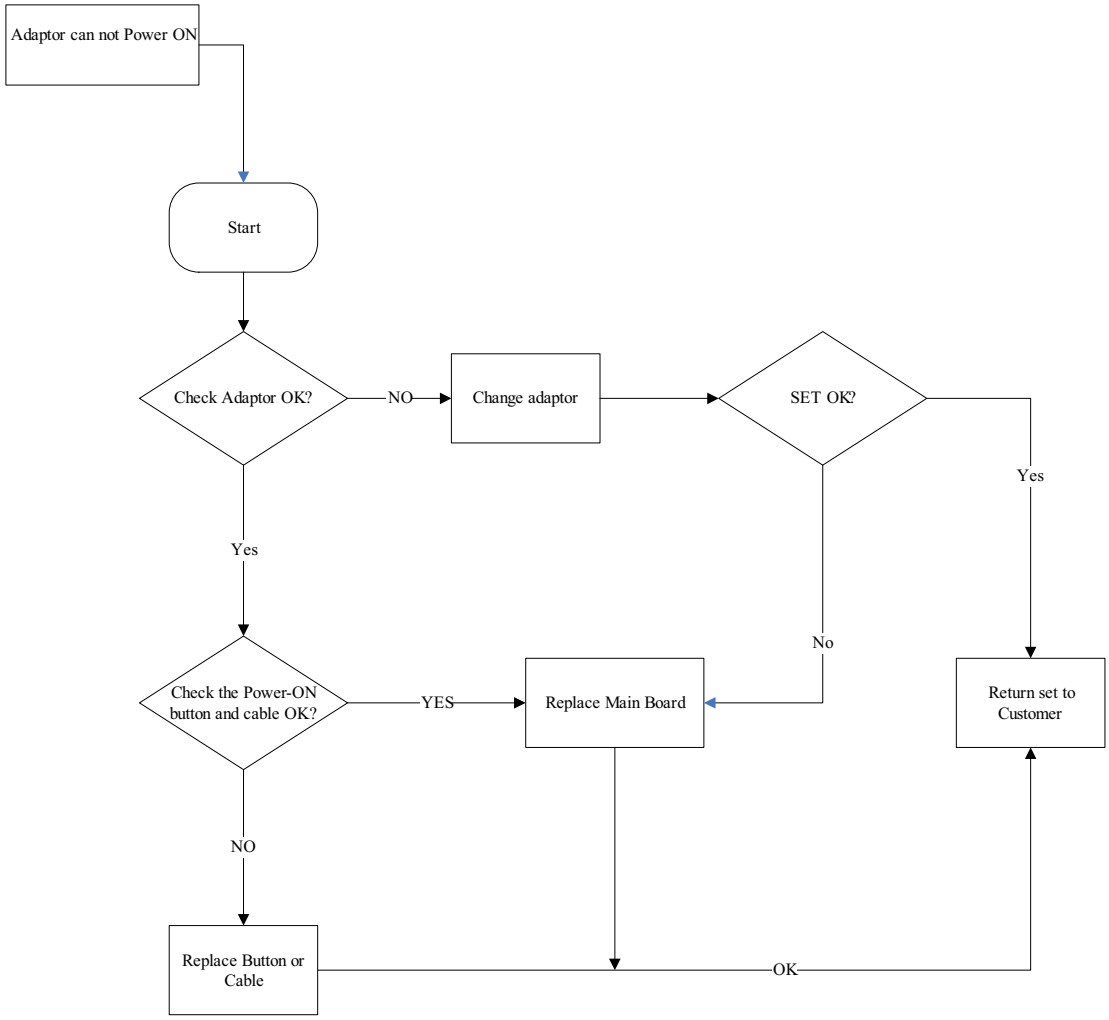
5.0 TROUBLESHOOTING

SYMPTOM: THE DVD DRIVE DOES NOT WORK



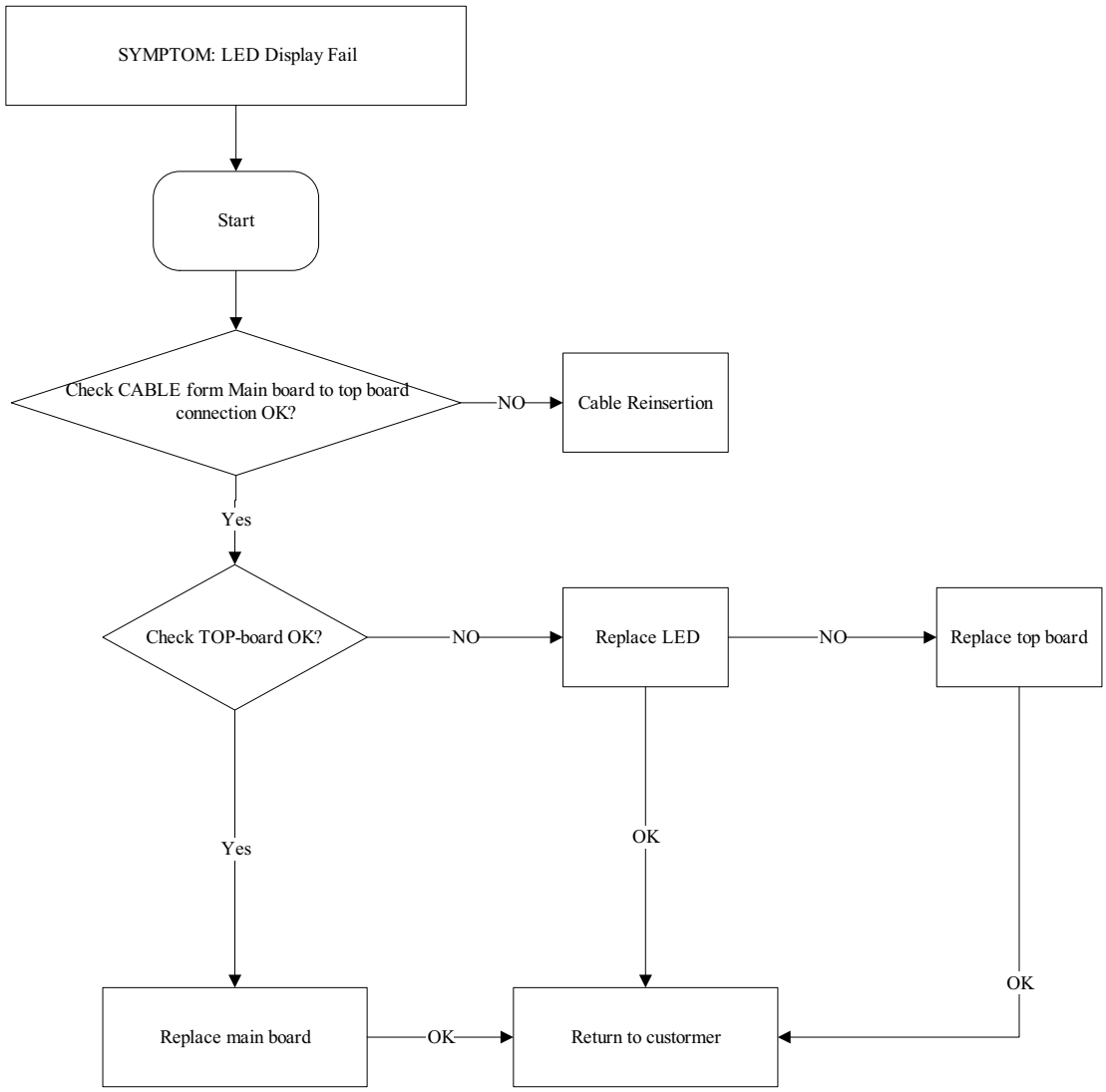
5.0 TROUBLESHOOTING

SYMPTOM: ADAPTOR CANNOT POWER ON



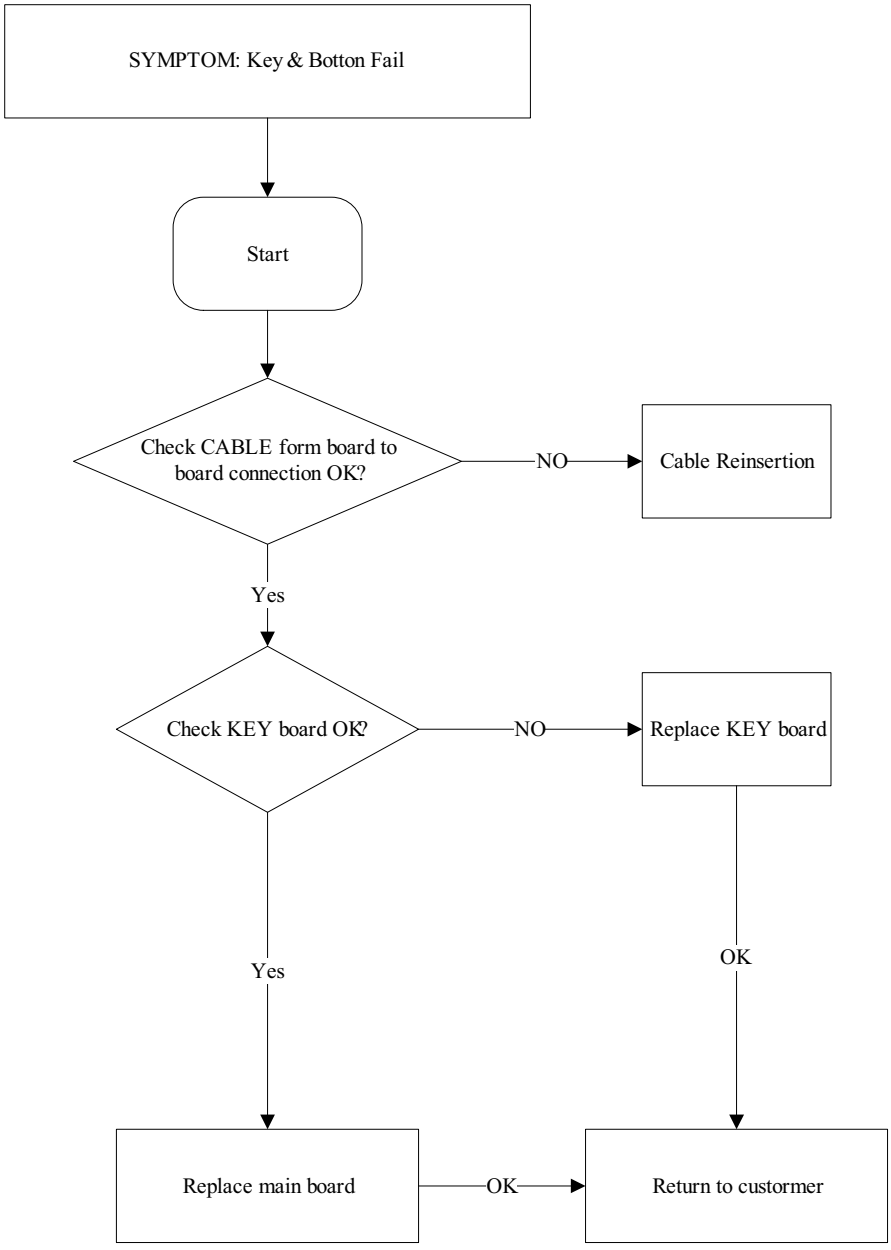
5.0 TROUBLESHOOTING

SYMPTOM: LED DISPLAY FAILURE

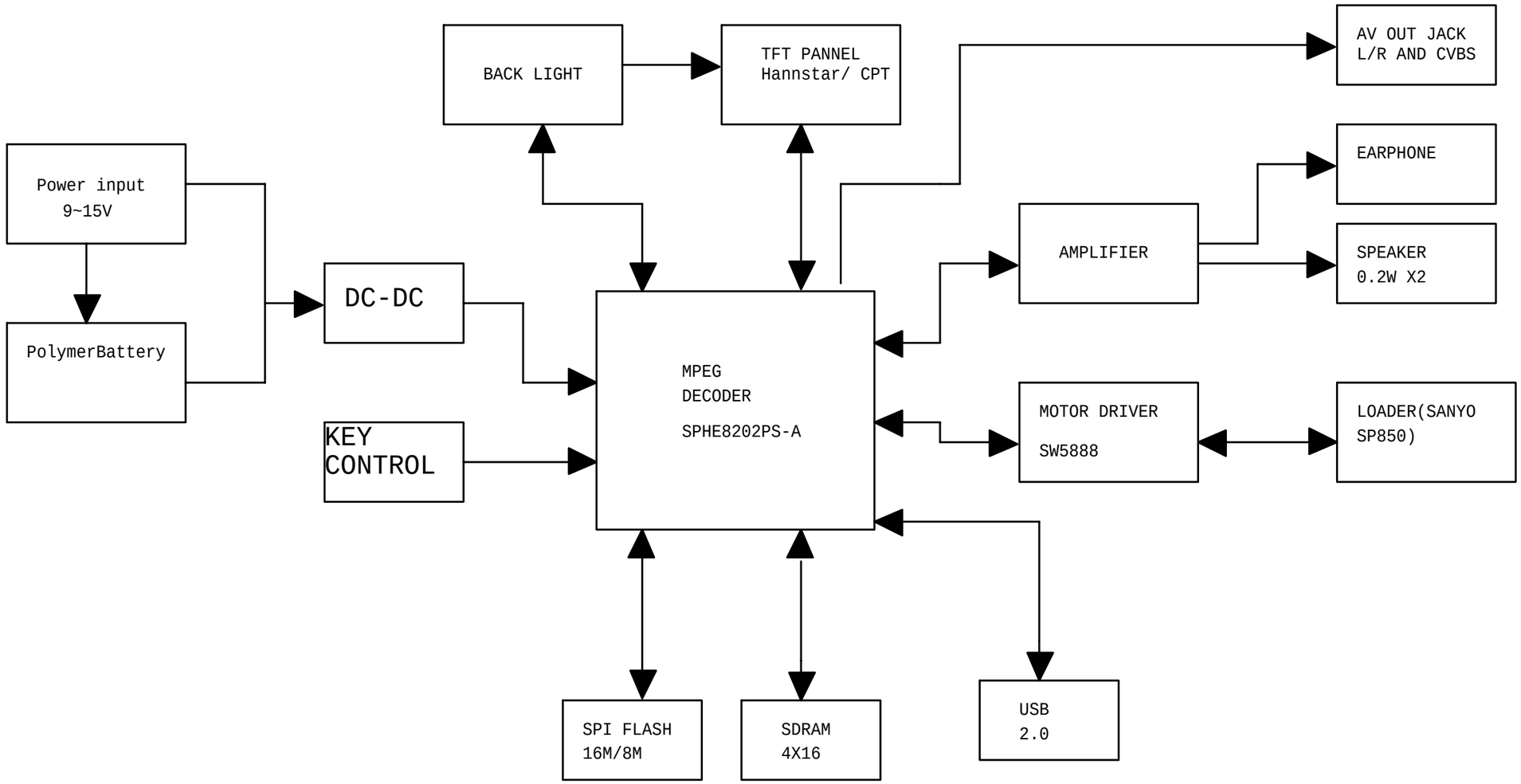


5.0 TROUBLESHOOTING

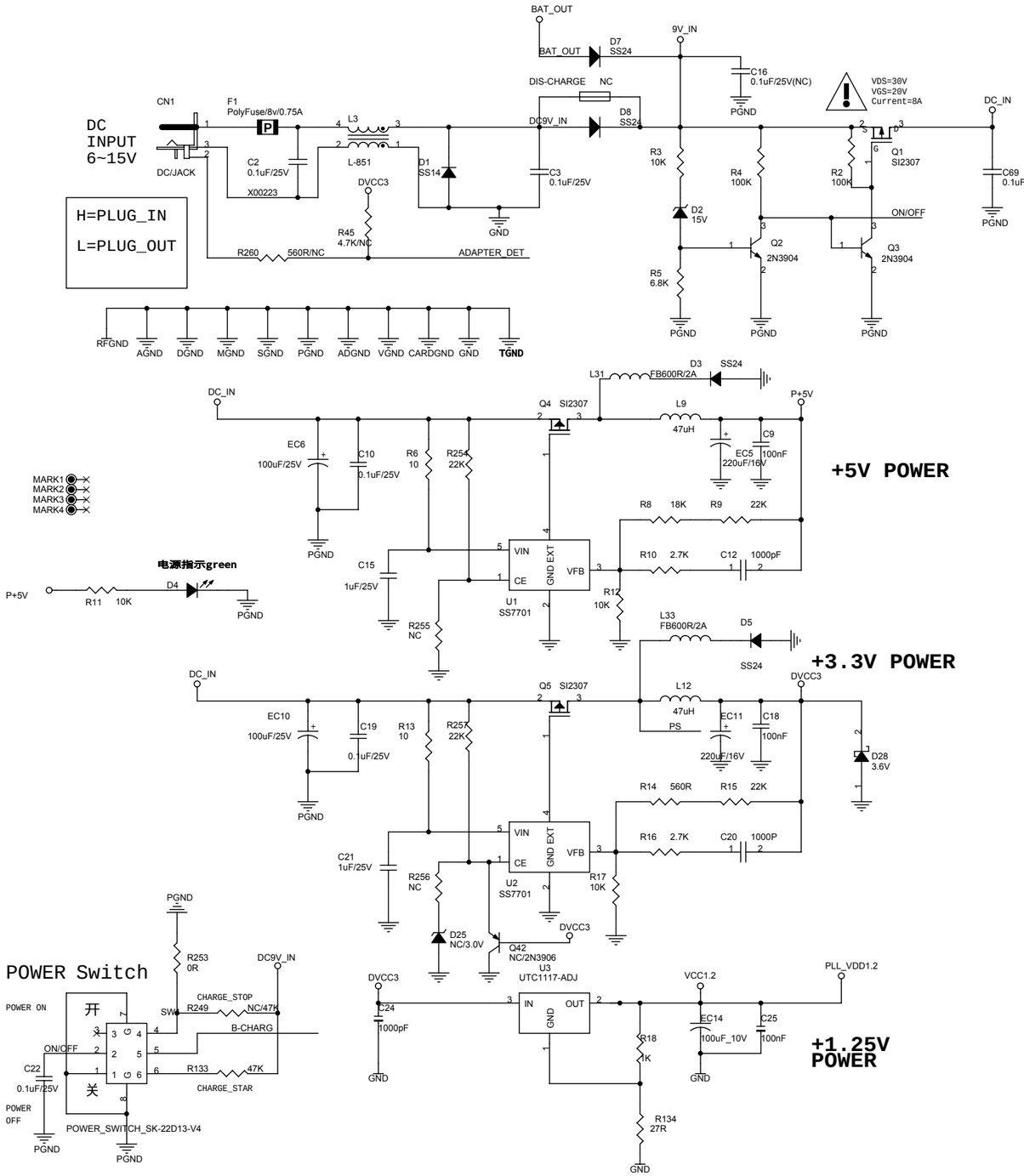
SYMPTOM: KEY & BOTTON FAILURE

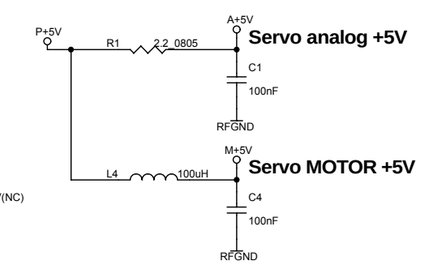


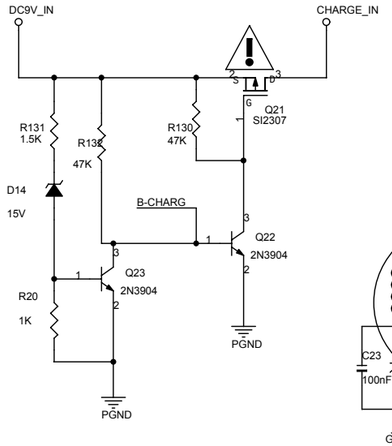
OVERALL BLOCK DIAGRAM

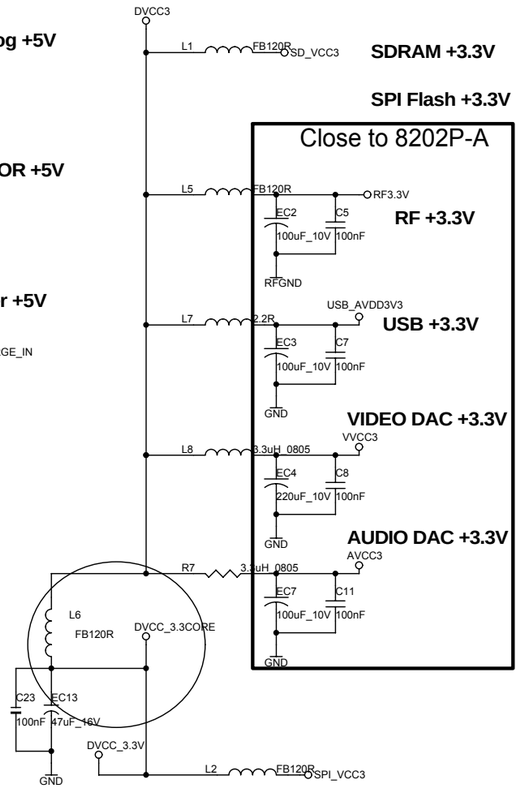


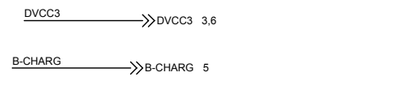
CIRCUIT DIAGRAM-DVD MAIN BOARD

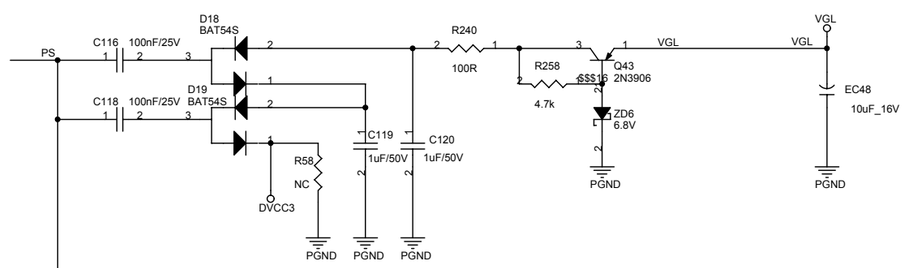


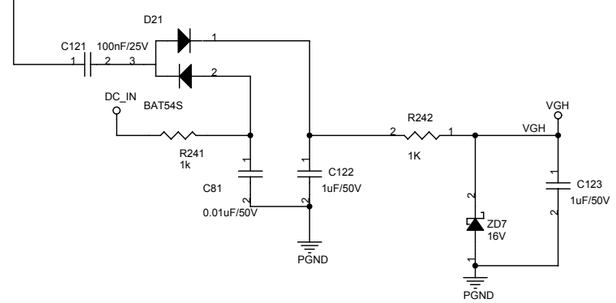












SANYO
850/870
Hitachi 1200X

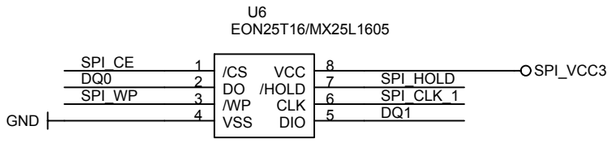
SPHE8202PS-A

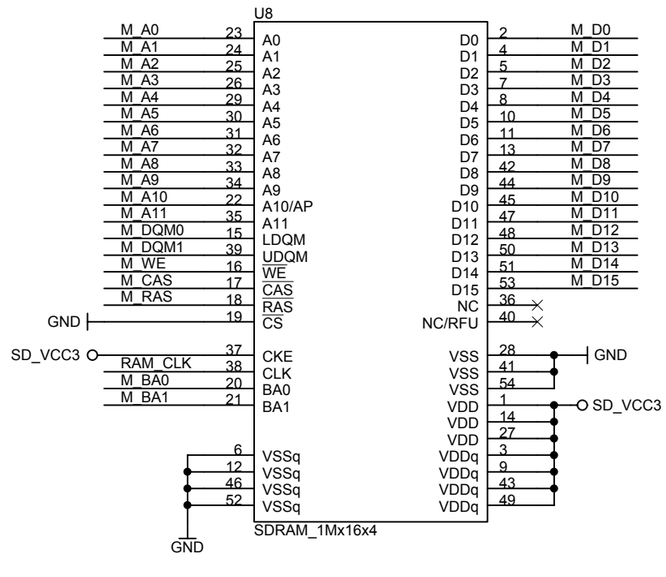
RESET

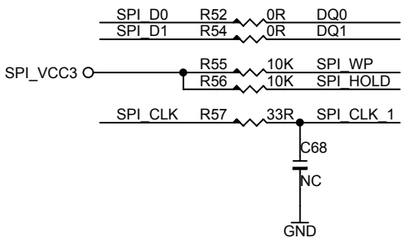
The Cover Limit Switch

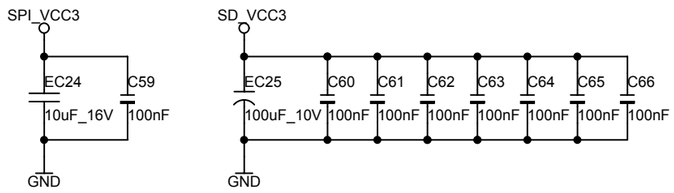
UART/I2C

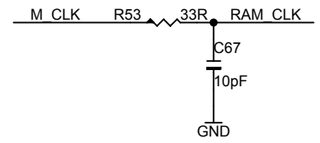
CIRCUIT DIAGRAM-DVD MAIN BOARD

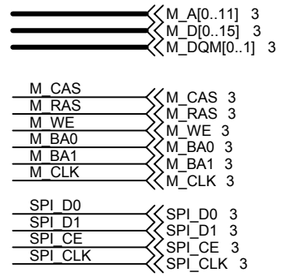




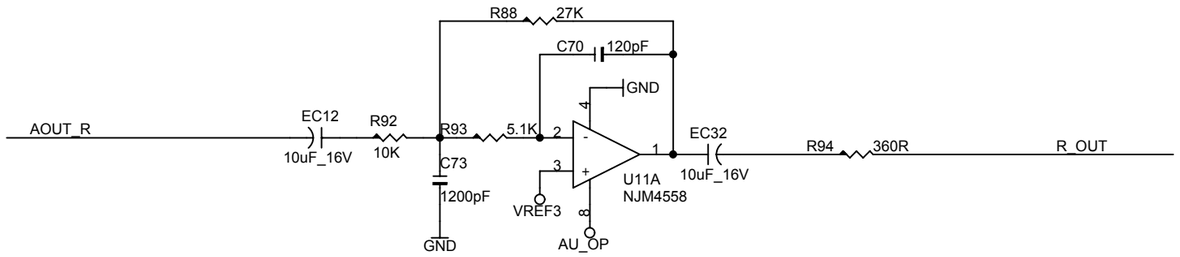


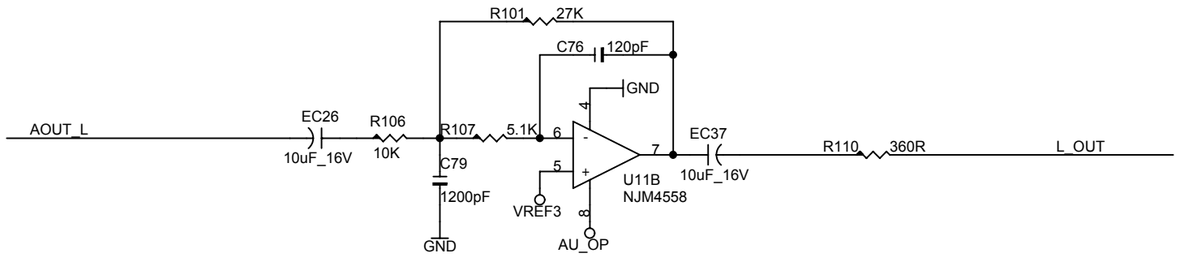


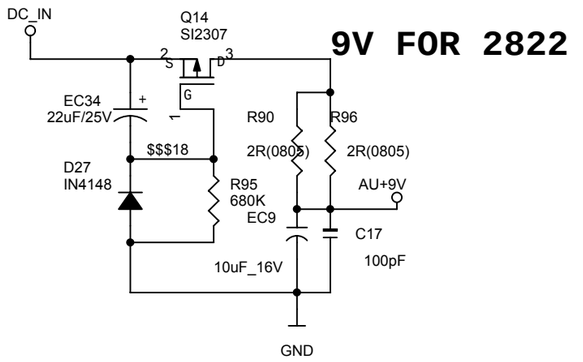


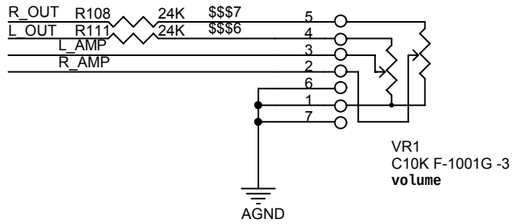


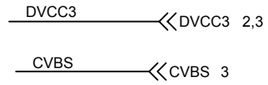
CIRCUIT DIAGRAM-DVD MAIN BOARD

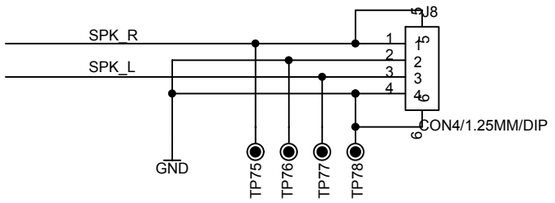


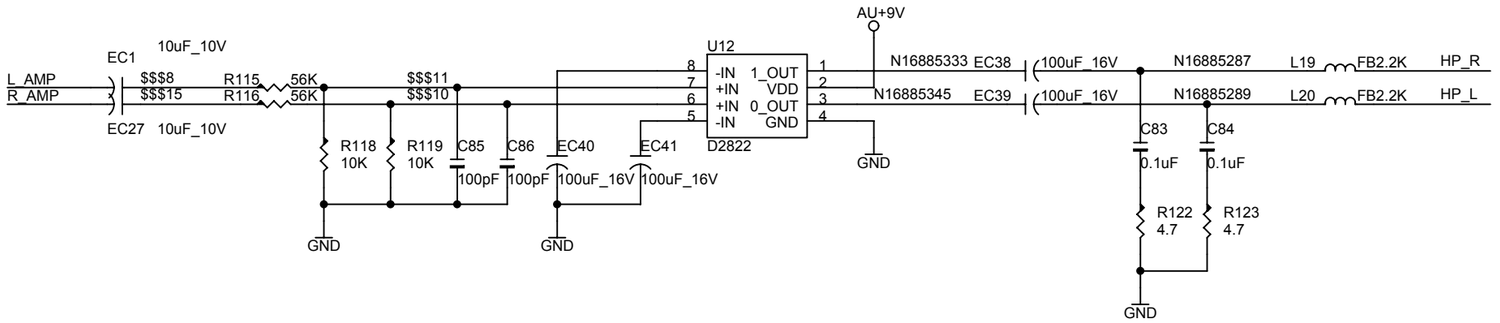


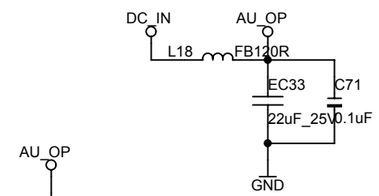


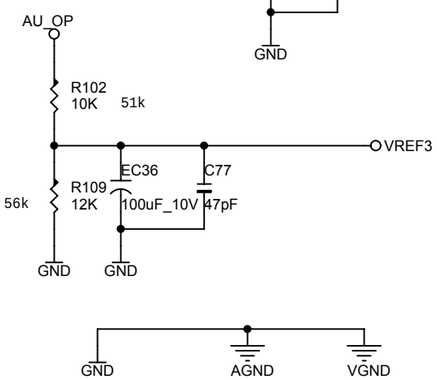


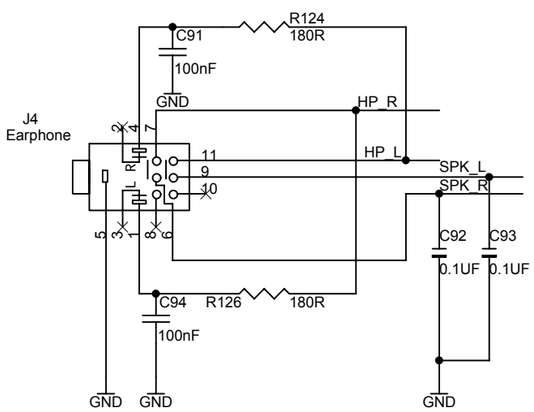


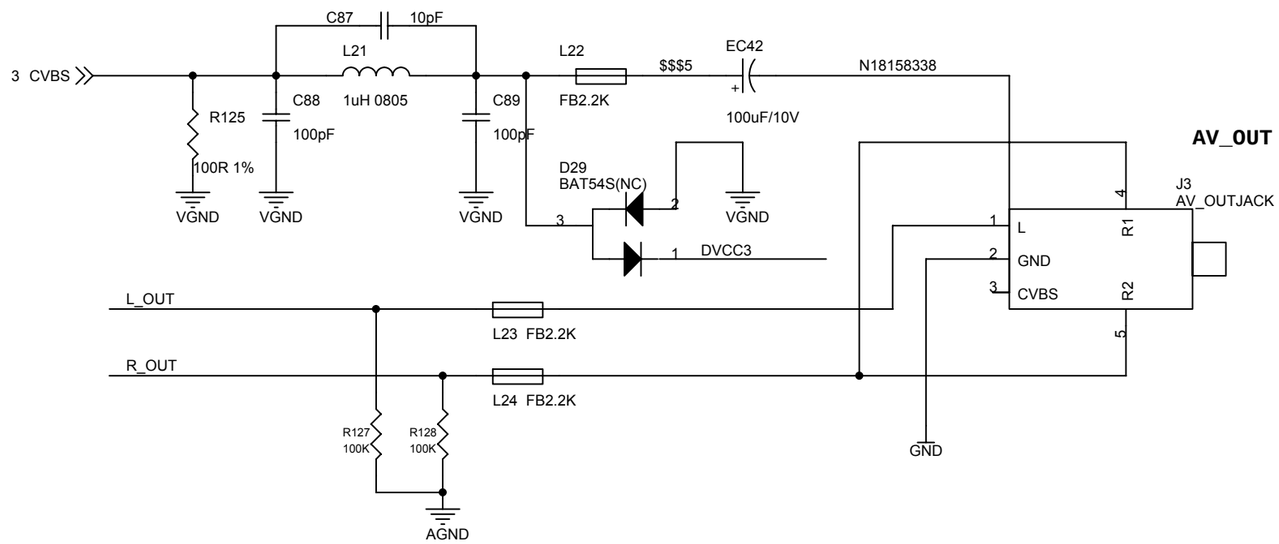




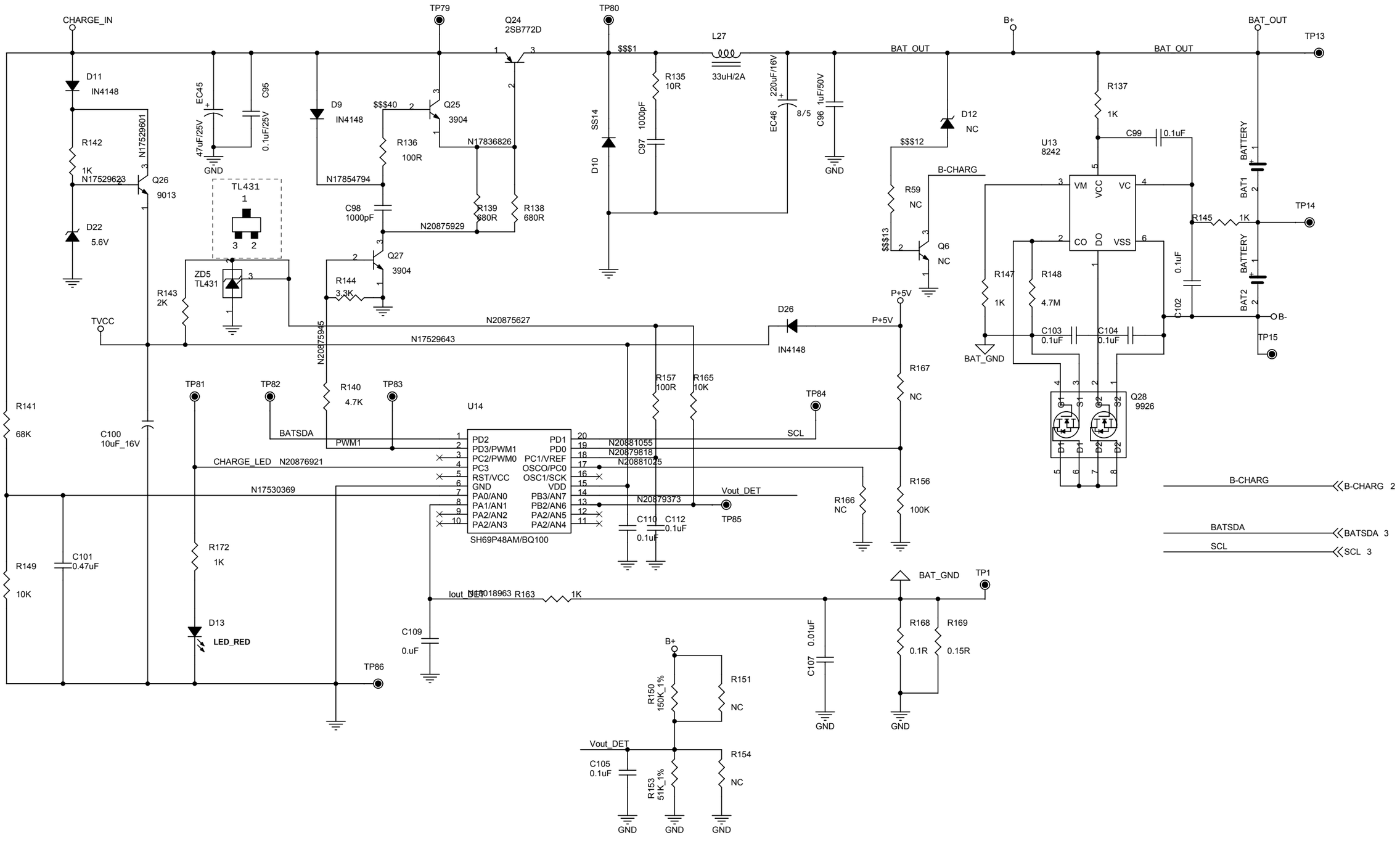


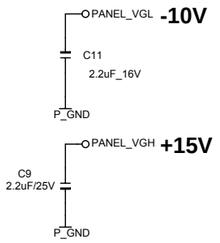


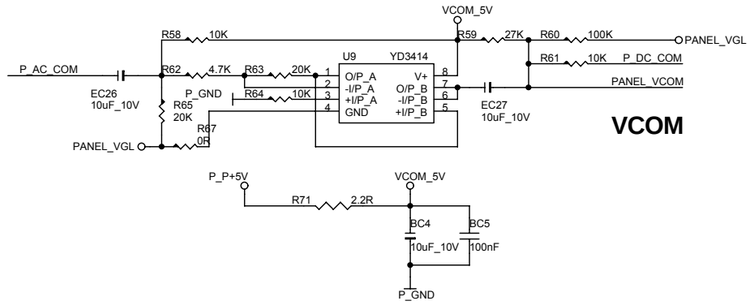


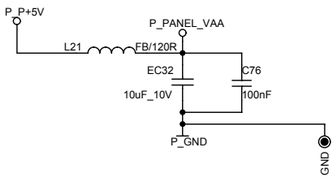


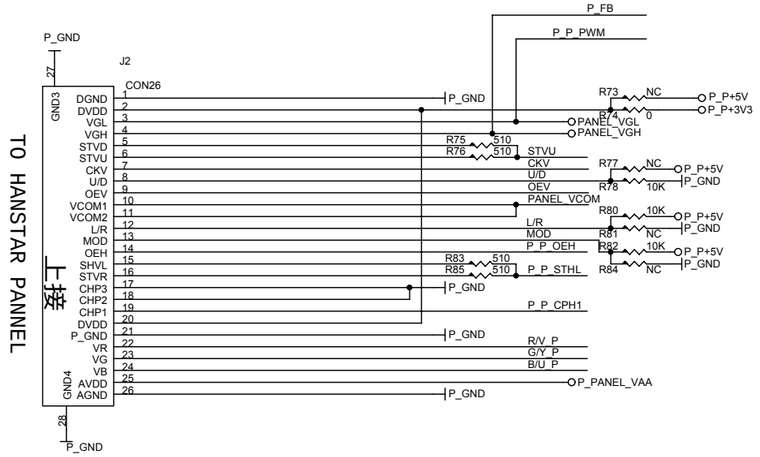
CIRCUIT DIAGRAM-DVD MAIN BOARD

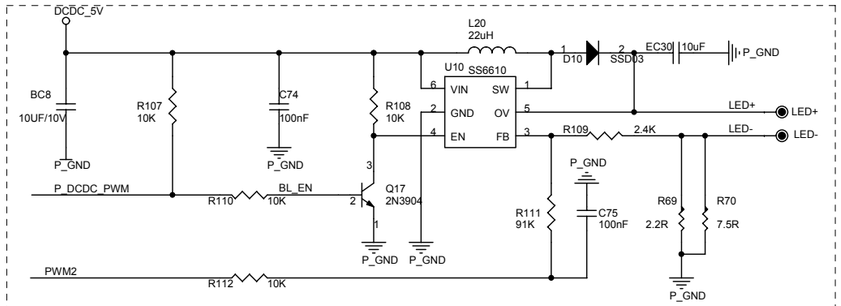


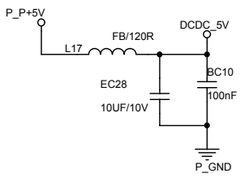

PANEL_VGL
-10V
C11
2.2uF_16V
P_GND
PANEL_VGH
+15V
C9
2.2uF/25V
P_GND

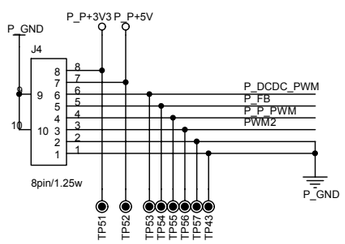

VCOM_5V
R58 10K
R59 27K
R60 100K
PANEL_VGL
R61 10K
P_DC_COM
U9
YD3414
O/P_A
-I/P_A
+I/P_A
GND
V+
O/P_B
-I/P_B
+I/P_B
P_AC_COM
R62 4.7K
R63 20K
R64 10K
EC26
10uF_10V
P_GND
R65
20K
R67
0R
PANEL_VGL
PANEL_VCOM
EC27
10uF_10V
VCOM
P_P+5V
R71 2.2R
VCOM_5V
BC4
10uF_10V
BC5
100nF
P_GND

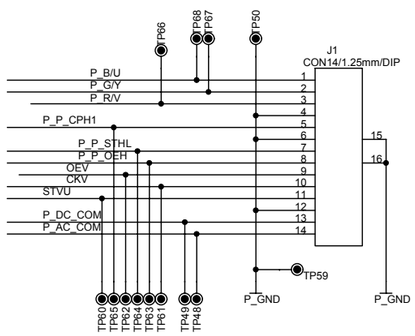

P_P+5V
P_PANEL_VAA
L21
FB/120R
EC32
10uF_10V
C76
100nF
P_GND
GND

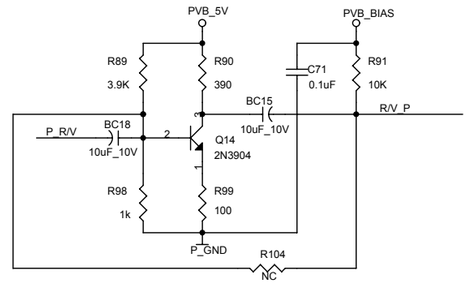

P_GND
J2
CON26
TO HANSTAR PANNEL
DGND
DVDD
VGL
VGH
STVD
STVU
CKV
U/D
OEV
VCOM1
VCOM2
L/R
MOD
OEH
SHVL
STVR
CHP3
CHP2
CHP1
DVDD
P_GND
VR
VG
VB
AVDD
AGND
GND3
GND4
P_FB
P_P_PWM
R73 NC
R74 0
P_P+5V
P_P+3V3
PANEL_VGL
PANEL_VGH
R75 510
R76 510
STVU
R77 NC
R78 10K
CKV
U/D
OEV
PANEL_VCOM
R80 10K
R81 NC
R82 10K
L/R
MOD
P_P_OEH
R83 510
R85 510
P_P_STHL
P_P_CPH1
R/V_P
G/Y_P
B/U_P
P_PANEL_VAA


DCDC_5V
L20
22uH
U10
SS6610
VIN
GND
EN
SW
OV
FB
D10
SSD03
EC30
10uF
P_GND
BC8
10UF/10V
R107
10K
C74
100nF
R108
10K
LED+
LED-
R109
2.4K
P_DCDC_PWM
BL_EN
R110
10K
Q17
2N3904
R111
91K
C75
100nF
R69
2.2R
R70
7.5R
PWM2
R112
10K


P_P+5V
DCDC_5V
L17
FB/120R
EC28
10UF/10V
BC10
100nF
P_GND


P_GND
P_P+3V3
P_P+5V
J4
8pin/1.25w
P_DCDC_PWM
P_FB
P_P_PWM
PWM2
TP51
TP52
TP53
TP54
TP55
TP56
TP57
TP49


TP66
TP68
TP67
TP50
J1
CON14/1.25mm/DIP
P_B/U
P_G/Y
P_R/V
P_P_CPH1
P_P_STHL
P_P_OEH
OEV
CKV
STVU
P_DC_COM
P_AC_COM
TP59
P_GND
TP60
TP65
TP62
TP64
TP63
TP61
TP49
TP48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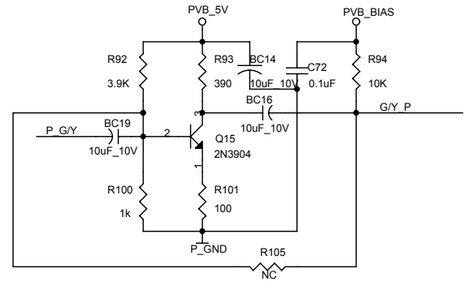
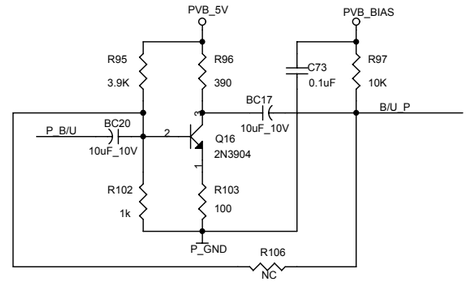
PVB_BIAS
R89
3.9K
R90
390
C71
0.1uF
R91
10K
BC15
10uF_10V
R/V_P
P_R/V
BC18
10uF_10V
Q14
2N3904
R98
1k
R99
100
P_GND
R104
NC


PVB_5V
PVB_BIAS
R92
3.9K
R93
390
BC14
10uF_10V
C72
0.1uF
R94
10K
BC16
10uF_10V
G/Y_P
P_G/Y
BC19
10uF_10V
Q15
2N3904
R100
1k
R101
100
P_GND
R105
NC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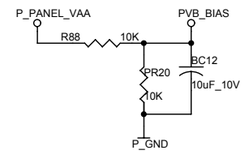
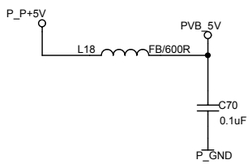
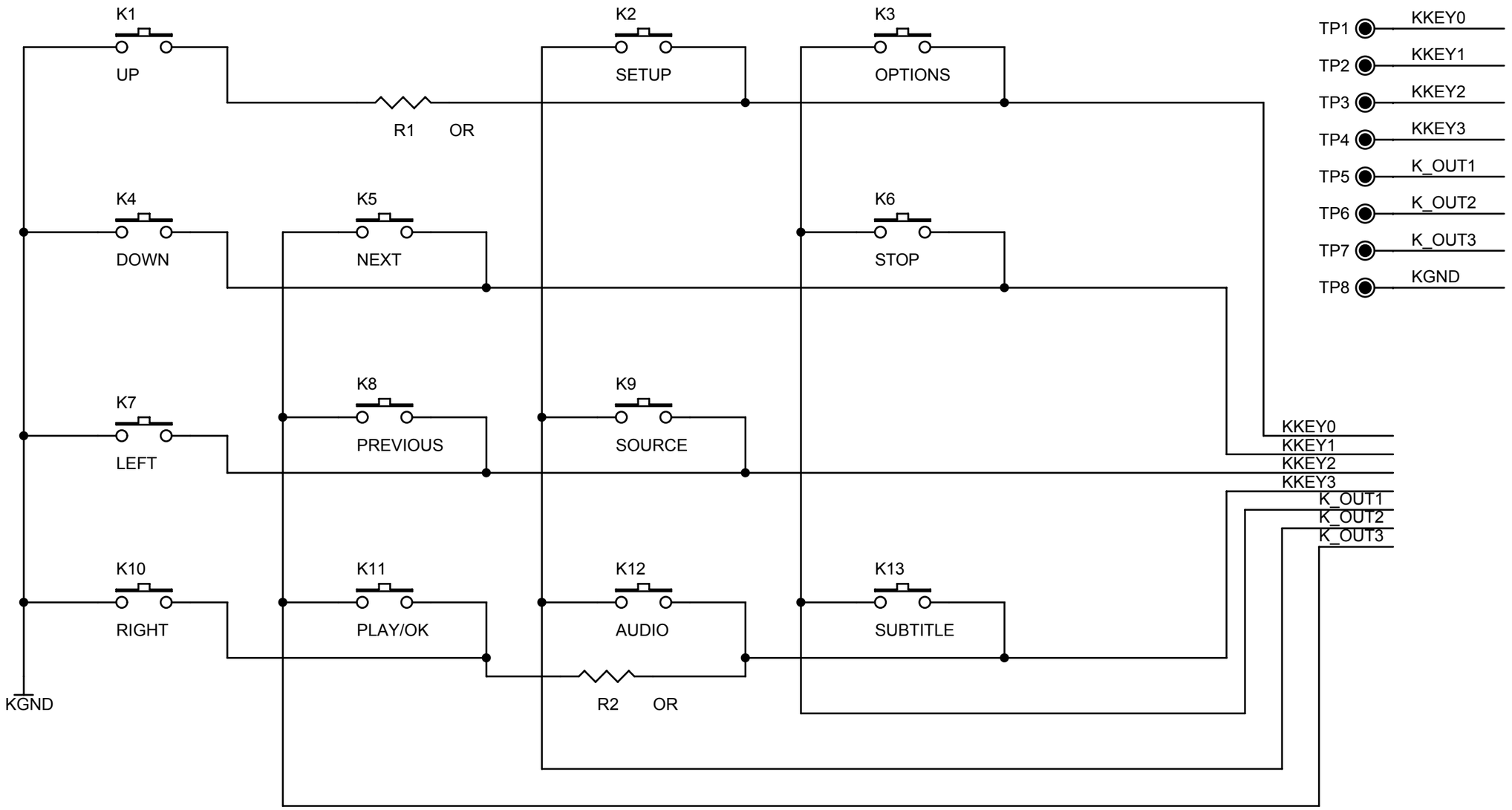
PVB_BIAS
R95
3.9K
R96
390
C73
0.1uF
R97
10K
BC17
10uF_10V
B/U_P
P_B/U
BC20
10uF_10V
Q16
2N3904
R102
1k
R103
100
P_GND
R106
NC


P_PANEL_VAA
PVB_BIAS
R88
10K
PR20
10K
BC12
10uF_10V
P_GND

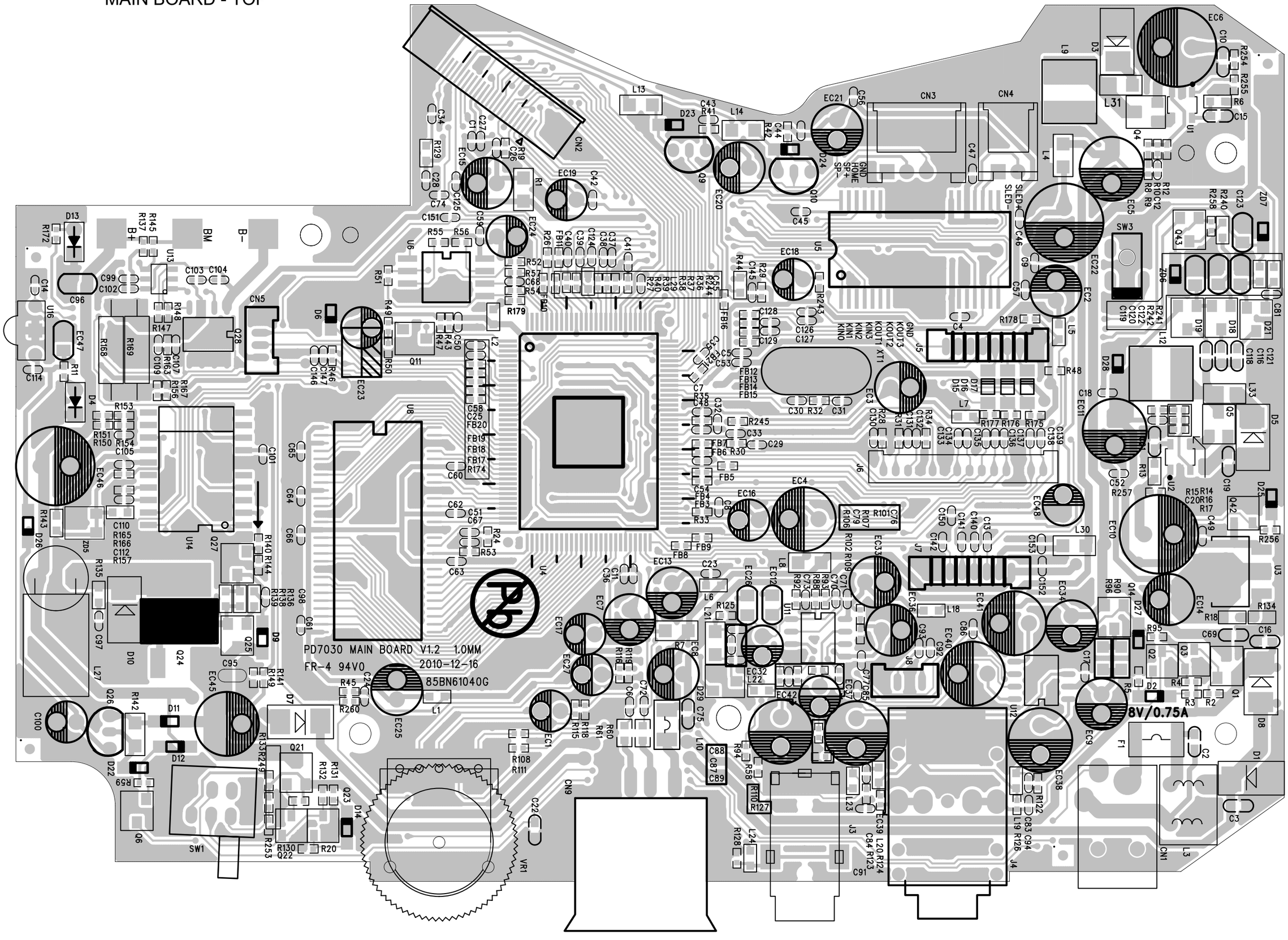

P_P+5V
PVB_5V
L18
FB/600R
C70
0.1uF
P_GND

CIRCUIT DIAGRAM-KEY BOARD

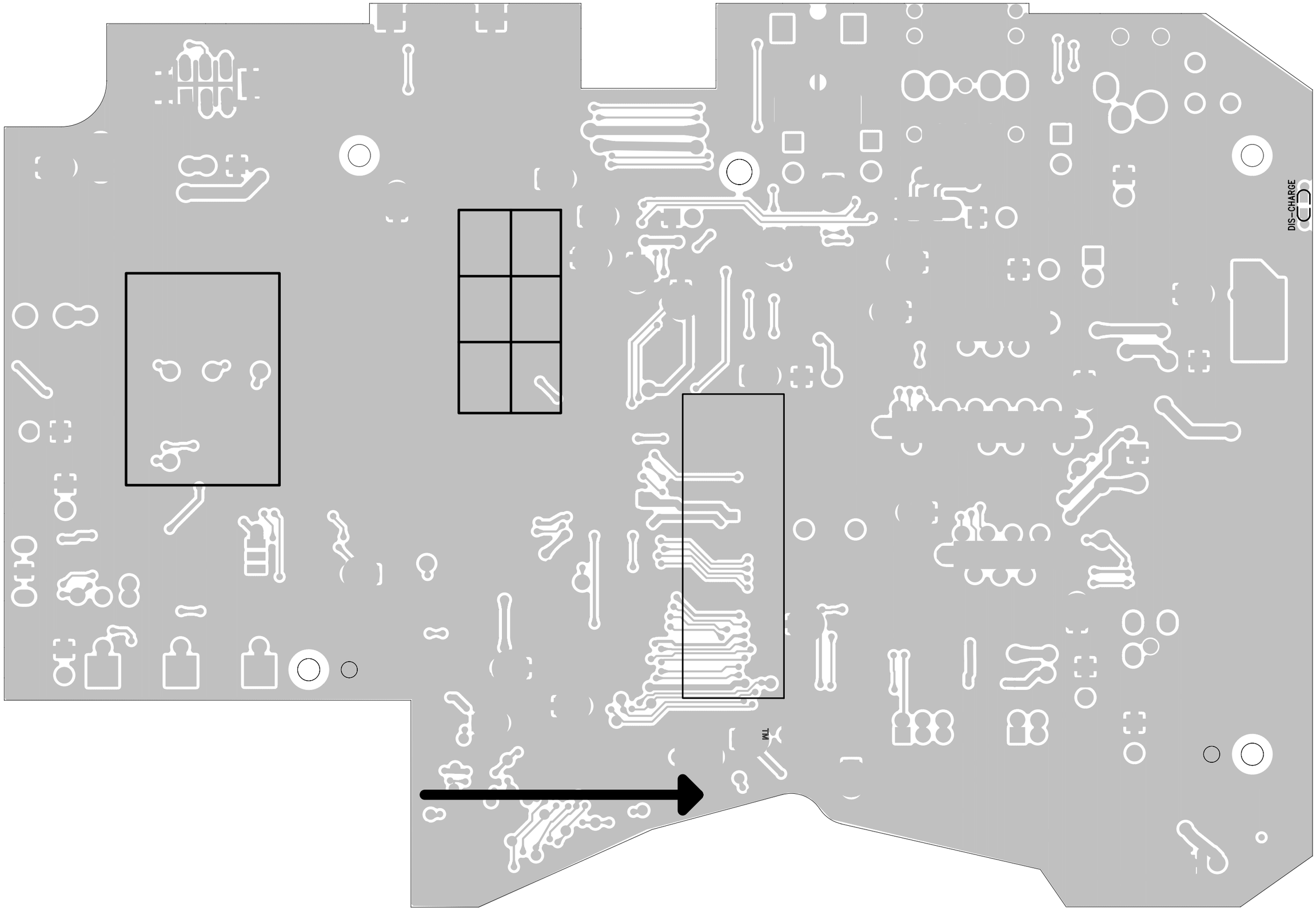


KEY_BOARD

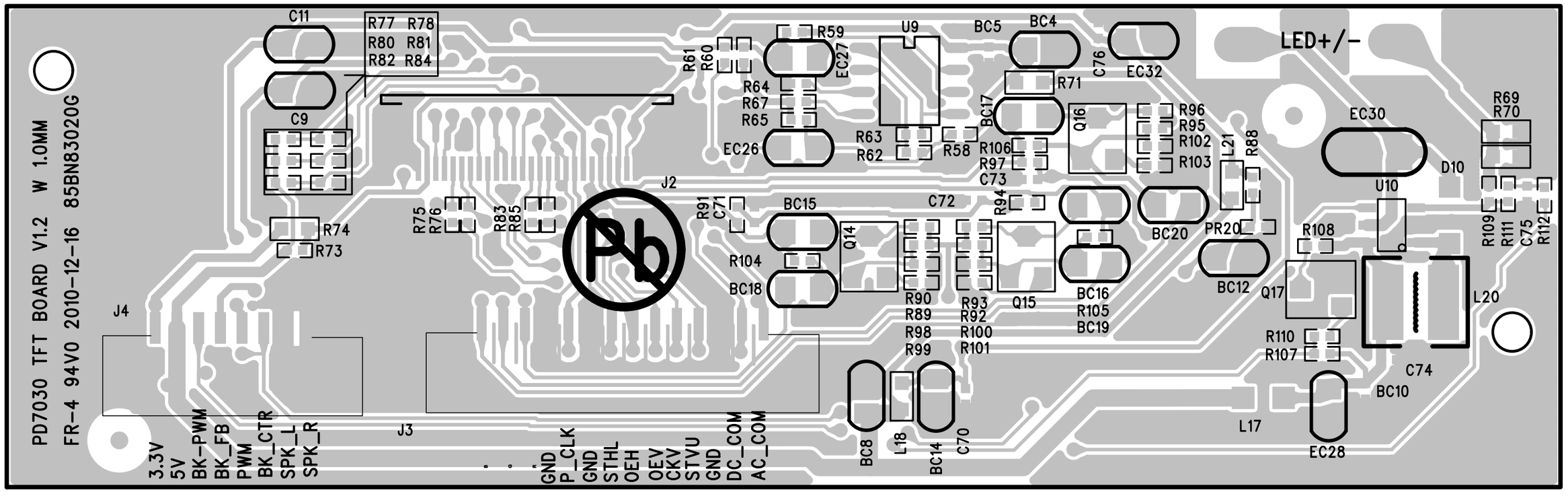
MAIN BOARD - TOP



MAIN BOARD - BOTTOM



TFT BOARD - TOP



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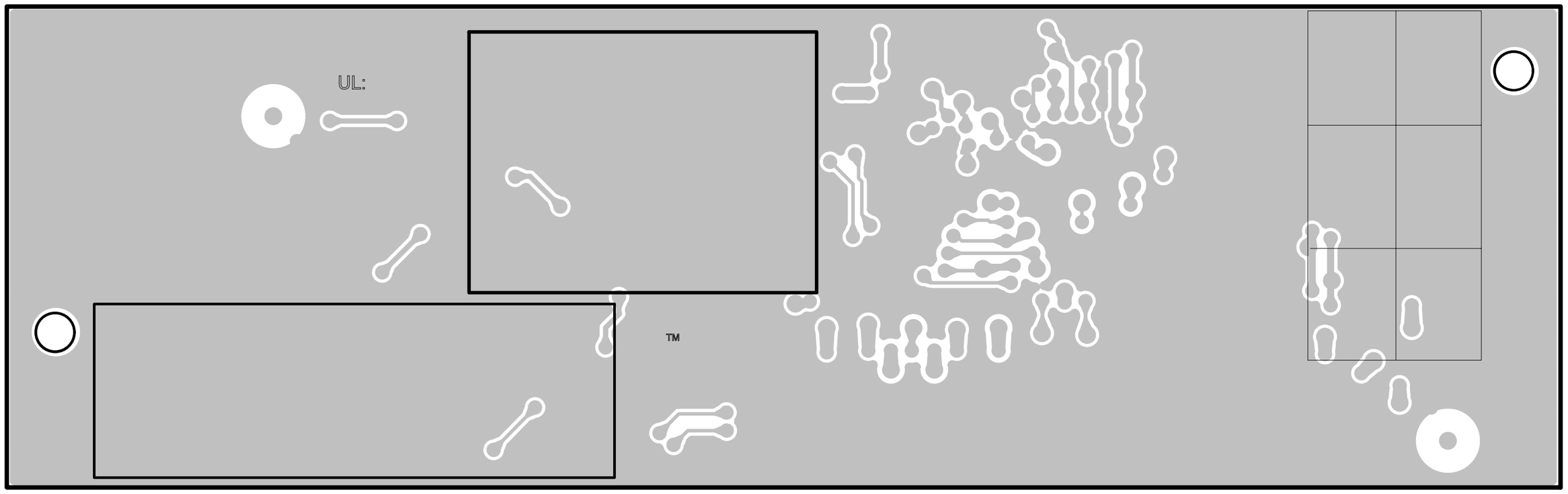
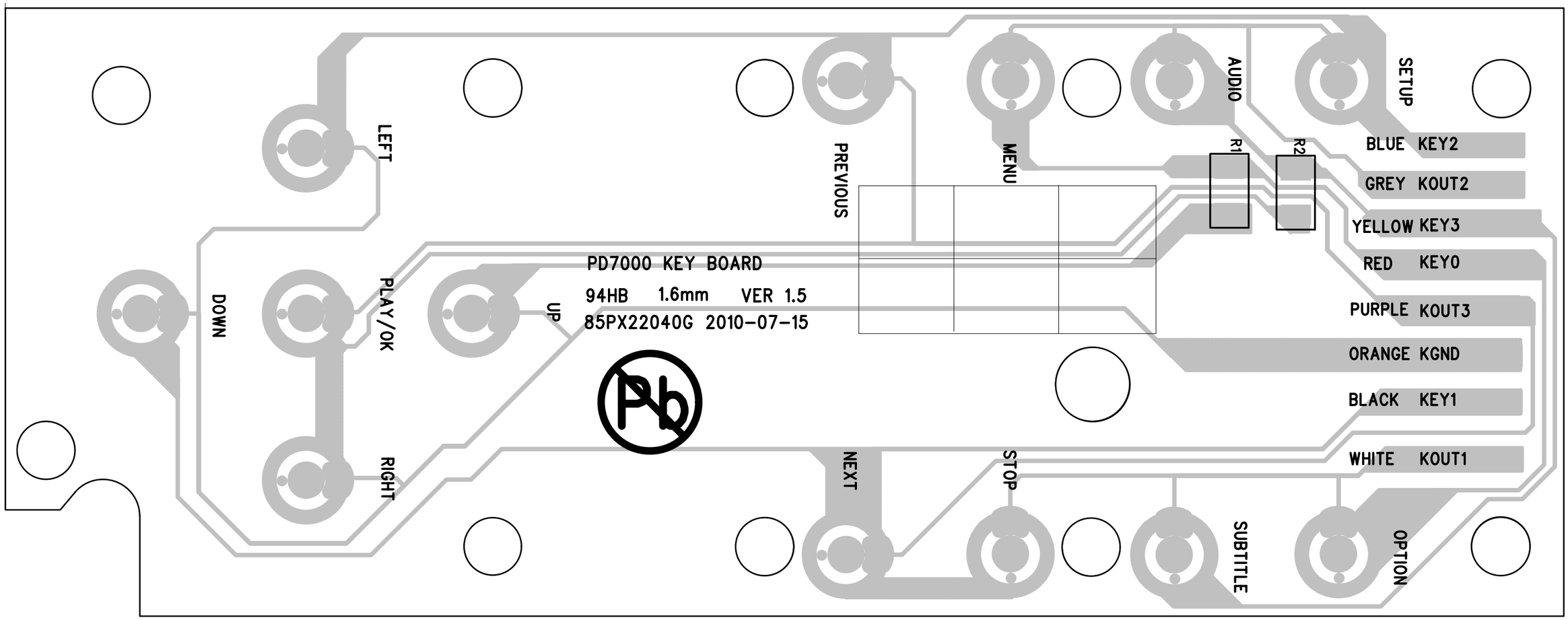


KEY BOARD - TOP



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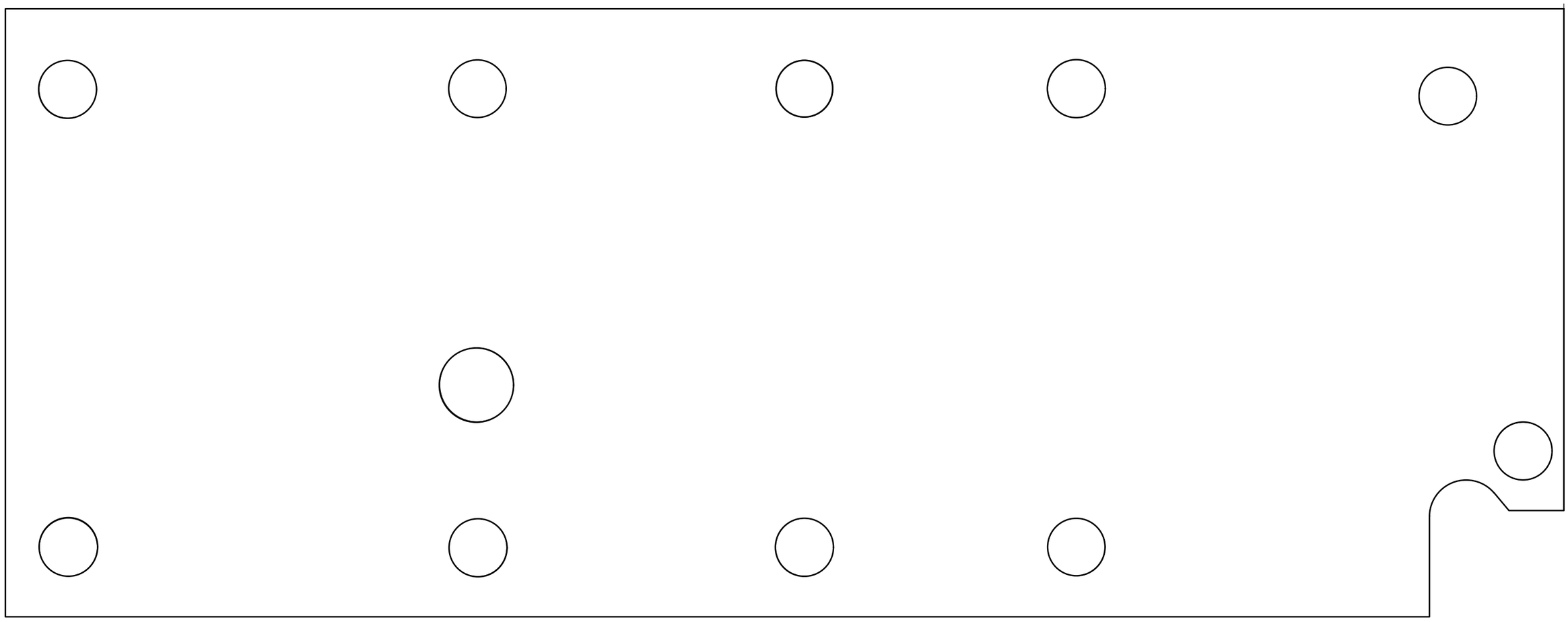

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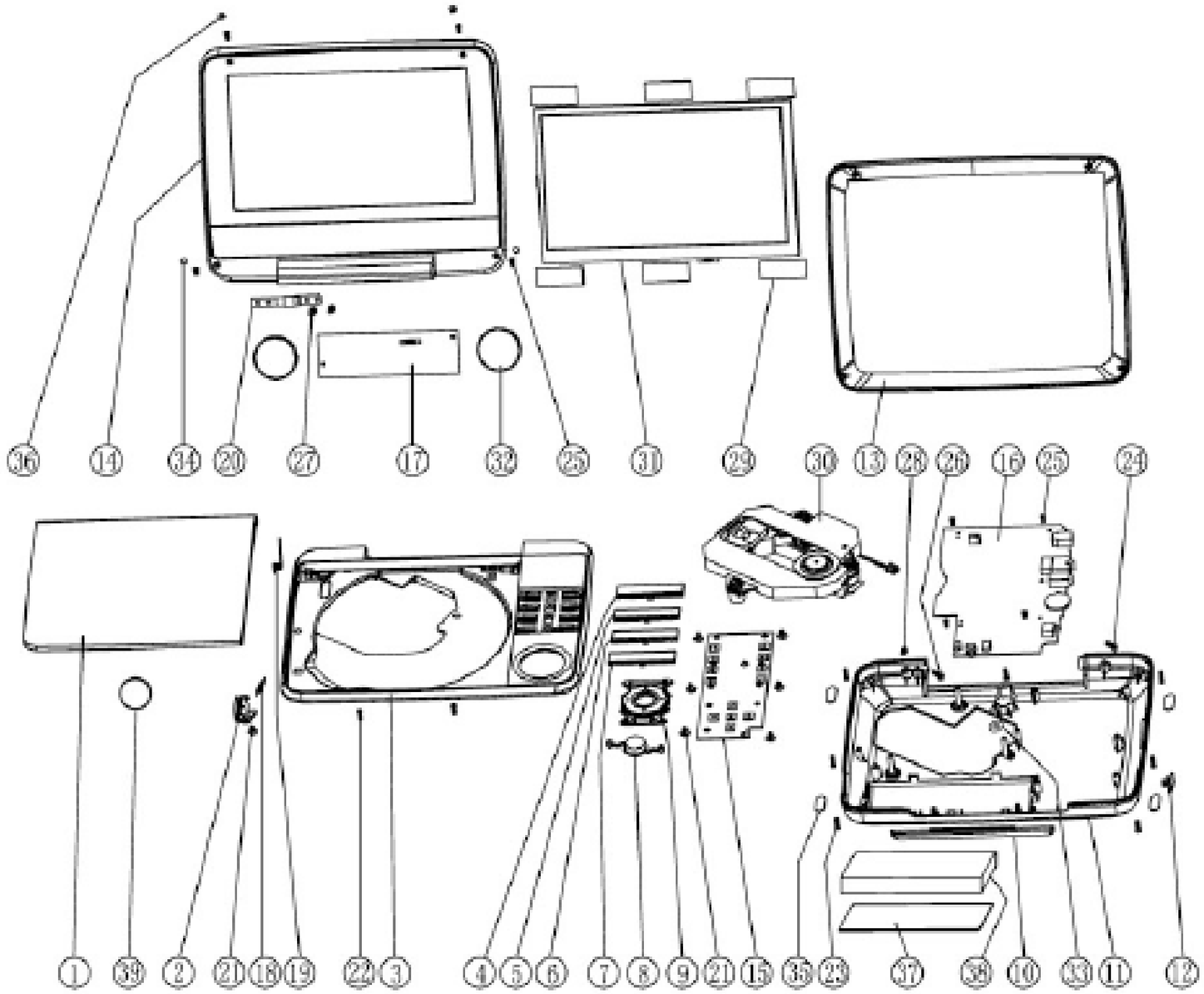
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12

9.0 REVISION LIST

Version 1.0

- Initial release

Version 1.1

- Add /55 version

Version 1.2

- Add /98 version

Version 1.3

- Add /77 version

Version 1.4

- Add /93 version

Version 1.5

- Add /94 version